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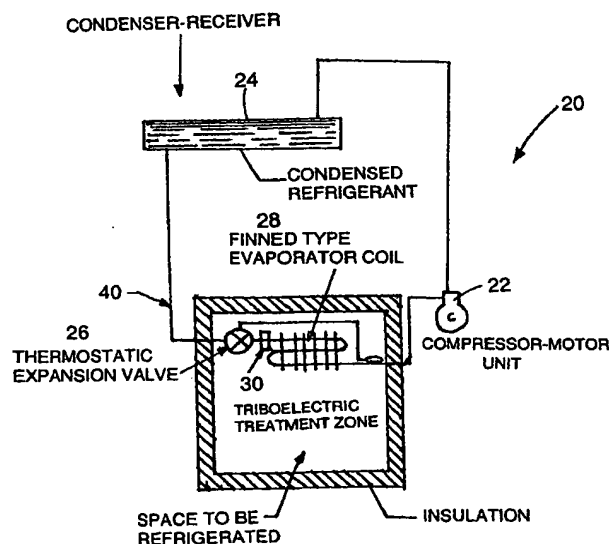
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(54) Title: METHOD AND APPARATUS FOR ENHANCING HEAT PUMP AND REFRIGERATION EQUIPMENT PERFORMANCE



(57) Abstract: A vapor compression apparatus and a method for operating a vapor compression system are provided. A working fluid is conveyed through a vapor compression system having a fluid line. A charging element is connected to the fluid line to direct an electric charge into working fluid. The electric charge is operable to disrupt intermolecular forces and weaken intermolecular attraction to enhance expansion of the working fluid to the vapor phase, increasing the capacity, performance and efficiency of the system components, and reducing system cycling mechanical wear and energy consumption.

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## A. CLASSIFICATION OF SUBJECT MATTER

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According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
None

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
None

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3,070,971 A (JACOBS) 01 January 1963 (01.01.1963), See column 1 lines 54-57.	1-7,9-13,15-21
A	US 6,332,331 B1 (CHENG et al) 25 December 2001 (25.12.2001), See entire document.	1-23
A	JP 411,209,990 A (HORII) 03 August 1999 (03.08.1999), See entire document.	1-23
A	US 2,698,127 A (BOWLUS) 28 December 1954 (28.12.1954), See entire document.	1-23
A	US 3,071,705 A (COLEMAN et al) 01 January 1963 (01.01.1963), See entire document.	1-23
A, B	US 6,662,569 B2 (SAMI et al) 16 December 2003 (16.12.2003), See entire document.	1-23

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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